DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 17 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims are to a composition or material having below than 200 W/kg of iron loss. This endpoint is not described or shown within any part of the originally filed specification. Although, the specification does indeed show values for this property under 200 W/kg; however, the endpoint claimed cannot find support in any part of the specification.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 5-6, 9, 12-13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz in 6372348 in view of Kato in 6162836.

Regarding Claim 1 and 9: Rutz teaches an iron powder composition useful for making powder magnetic cores. Rutz teaches a starting iron-based core particle, which is iron based or nickel based. Preferred examples of starting powders are the ANCORSTEEL series (See Column 6, Lines 5-70). These powders are then provided with two different insulating layers. The first of these is considered a preinsulating layer and is typically a phosphate complex of iron (iron phosphate salt) (See Column 7, Line 55-Column 8, Line 24). This phosphate salt can be created by the use of phosphoric acid or with other materials such as alkali metal or earth metal phophates. The iron powder with this preinsulating layer is then dried.

After this step, an annealable insulating material is coated upon the iron phosphate salt layer. This insulating material is in the form of oxide particles dispersed in a resin in a ratio of from .3:1 to 1:1 (polymer: oxide). This layer is continuous and non porous and decomposes at temperatures of 250 C or greater (See Column 4, Lines 17-70). Typical oxides used in this annealable material are silica, alumina, boria, sodium carbonate, etc (See Column 5, Lines 25-30). Comparable to the weight of the iron particles, this layer can be present from .001 to 15 wt%; meaning that the amount of the resin is from .00023 to 7.5 wt% of the composition (See Column 5, Lines 50-55).

Furthermore, when these composite particles are to be used for compression molding or similar compaction techniques, Rutz teaches that it is advantageous to mix a lubricant in an amount up to 1 wt% with the composite particle. One exemplary lubricant composition is zinc stearate, which is a metallic soap. Therefore, in terms of the amount of lubricant used in his composition, Rutz teaches an overlapping amount with the instant claims. One of ordinary skill in the art need only select from this portion of the overlapping ranges to arrive at the invention as claimed. Overlapping ranges have been held to present a prima facie case of obviousness over the prior art. See MPEP 2144.04.

Rutz is silent as to the particle size of zinc stearate used in his invention.

However, Kato teaches zinc stearate having average particle sizes between 1 and 2 (See Examples 1-5). These zinc stearates would be suitable in the invention of Rutz based on the fact that they are a lubricating composition as noted by Kato at line 54-60 of Column 3. One of

ordinary skill in the art would find it obvious to use the zinc stearate of Kato in the composition of Rutz based on the fact that Rutz explicitly notes advantages obtained by adding zinc stearate; however, Rutz is silent as to specific types and properties desirable in this zinc stearate. One would thus be motivated to add the zinc stearate composition of Kato in order to gain all the benefits noted by Rutz including, reduced stripping and sliding pressures.

Regarding Claim 5 and 12: Comparable to the weight of the iron particles, the oxide/thermoplastic can be present from .001 to 15 wt%; meaning that the amount of the resin is from .00023 to 7.5 wt% of the composition (See Column 5, Lines 50-55). Suitable resins are noted on the top of Column 5, wherein alkyd, acrylic, and epoxy resins are noted. All of these resins are thermoplastic. Since they encapsulate the particles and the particles are disposed together prior to compaction and sintering, this thermoplastic is interposed between the particles.

Regarding Claims 6 and 13: Rutz in view of Kato teaches a method of making a powder magnetic core using the aforementioned materials by using compression molding at an elevated temperature and a pressure ranging from 20-70 tsi.

5. Claims 7 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz in 6372348 in view of Kato in 6162836 as applied to claims 6 and 13 above, and further in view of Rutz in 5306524 (Rutz2).

6. Please review the previous 103 rejection to discern the teachings of Rutz in view of Kato.

Rutz in view of Kato are silent as to the expected fill rate of the final magnetic core. Only the density of the comparative examples are given and no indication of how these numbers compare to theoretical density are shown.

However, Rutz2 shows the density of cores made of the same materials as those of Rutz in view of Kato, that being Ancorsteel 1000C. Rutz2 shows that the density of Ancorsteel compacts at 50 torr and 0% BN is approximately 7.391 g/cc where this represents 96.4% fill ratio. The comparative examples of Rutz shown in Table 1 state that the dual coated iron particles of the same material reach 7.26 g/cc. This figure in terms of the data given by Rutz2 would convert to approximately ~95% fill rate. It is noted that the comparative examples of Rutz are cold molded. Rutz had previously stated that by performing compression at elevated temperatures, the compacted density of the core components is increased resulting in overall increased performance. Therefore, the final density of hot pressed magnetic cores of Rutz in view of Kato would necessarily be above 95% fill rate based upon the fact that the comparative cold pressed products reach 95% and improvements in density are expected when the core is compressed under an elevated temperature.

Response to Arguments

Applicant's arguments filed 10/27/2009 have been fully considered but they are not persuasive. The declaration submitting that there are unexpected results in the claimed subject matter is unconvincing as the claims are not within the same scope as the unexpected results arrived at by applicant. The unexpected results described by the applicant are present in only

those compositions wherein the zinc stearate content is between .001-.01 wt%. This component, zinc stearate is no where in the claims. As the applicant does not claim the component resulting in unexpected results, the assertion is not in line with the claimed subject matter. The arguments as to the criticality based on the zinc stearate amount, in the declaration, specification and attorney arguments is addressed. It is noted that if the claims were to be limited to zinc stearate such arguments would be found convincing and the rejection would be withdrawn. Furthermore, the assertion that the optimization of ranges is not obvious based on the broader range disclosed by the prior art as the range of compositions based on the criticality of the range is only established for a singular lubricating agent, zinc stearate. The new claims have added limitations not found in the specifications, as no where is the iron loss " less than 200 W/kg". Although embodiments of the invention having this loss are found, there is no support for the arbitrarily construed threshold value. There is also no support outside the explicit values cited in the Tables shown in the instant specification.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 2005/0205848.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Hoban whose telephone number is (571) 270-3585. The examiner can normally be reached on Monday - Friday from 7:30 AM to 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew E Hoban/ /C. Melissa Koslow/

Examiner, Art Unit 1793

Primary Examiner, Art Unit 1793